



STATUS REPORT Progress and Improvements

DPW BUREAU/OFFICE: Back River Wastewater Treatment Plant (Back River) Date: 6/10/2023

Parameters	May 2023	Monthly Permit limit	Meeting Requirement
Total Suspended Solids (TSS)	2 mg/l (Outfall 001) 1 mg/l (Outfall 002)	10 mg/l (both outfalls)	Yes
Biochemical Oxygen Demand (BOD)	3 mg/l (Outfall 001) <2 mg/l (outfall 002)	10 mg/l (both outfalls)	Yes
Total phosphorus (TP) *	0.11 mg/l (Outfall 001) 0.13 mg/l (Outfall 002)	0.20 mg/l (both outfalls)	Yes (Outfall 001) Yes (Outfall 002)
Ammonia (NH3)	0.6 mg/l (Outfall 001) 0.2 mg/l (Outfall 002)	5.1 mg/l (Nov, 1 to Apr. 30) 2.0 mg/l (May 1, to Oct. 31), both Outfalls	Yes
E-coli	2 MPN/100 ml (Outfall 001) 1 MPN/100 ml (Outfall 002)	126 MPN/100 ml (both outfalls)	Yes

MPN = Most Probable Number; **N/A** = Not Applicable

Parameters (Outfall 001)	Annual Limit	Seasonal Limit (May 1 to Oct. 31)	May Official Total	Meeting Requirements
Total Nitrogen (TN)	1,582,055 lbs./yr. cumulative	99,782 lbs./month	52,359 lbs./month	Yes*



Figure 1: Back River WWTP Outfall 001

Maintenance Updates



Figure 2: Back River WWTP Outfall 002 Pump Replacement

Back River WWTP continues with 4 Primary Settling Tanks in full service (#1, #7, #8, and #11). Repairs to PST #2 remain on schedule for completion in July 2023. PST #9 and 10 have repair timelines of July and September 2023, respectively. PST #3 will be in service in November 2023. PST #4 will be ready in January 2024. PST #5 is slated to begin repairs in Fall 2023, and PST #6 still needs to be cleaned out and assessed for repairs. This timeline would provide 8 available PSTs by the end of 2023.

There are 15 of 18 reactors available for the process (12 in service with three on standby). Due to supply chain delays, the remaining three are awaiting materials to complete the repairs. The optimal number for regular flow is ten reactors. The secondaries have 32 of 36 final clarifiers, 23 in service, with nine available on standby. Plant staff continues scaling back the number of in-service reactors and clarifiers toward the optimal amount for the flow. This change will increase the overflow rate through the process and reduce detention times which can lead to algae and phragmites growth within the process areas.

All 52 De-Nitrification Filters (DNF) filters remain available for service, including 13 filters for redundancy. All methanol sensors have been replaced and calibrated, allowing the system to work automatically.

Currently, three of four centrifuges are available for operation. Parts for Centrifuge #4 are still being shipped from Germany, and the delivery date is yet to be determined. We hope to have parts on site by fall for installation. Additionally, new polymer units and day tanks have been installed to improve the solids capture rate within the centrifuges and improve the centrate. The cake material produced from the City centrifuges is hauled out for composting. Composting is one way Back River supports DPW's environmental protection mission. Our mission statement states, "We support the health, environment, and economy of our City and region by providing customers with safe drinking water and keeping neighborhoods and waterways clean."

Rehabilitation of the in-ground and egg-shaped digesters will begin in July. This critical work will rehabilitate processes and equipment at the end of their useful life cycle. The result will aid the plant in biosolids digestion (which reduces the number of biosolids to process and dispose of by ~ 40%) while also generating methane gas used for heating and electrical generation to offset utility costs.

Preventive maintenance efforts continue to be the primary focus of the maintenance staff.

Compliance and Safety

On April 26, 2023, The Office of Environmental Regulatory Compliance and Safety (ERCS) participated in MDE field inspections with MDE environmental compliance specialists at Back River WWTP. ERCS provided

compliance support in coordinating plant update reports to MDE. The City and Atkins continue implementing the Weekly Asset Management and Safety Meeting to increase efforts for current site hazards and prior MOSH 2021 violations. MOSH abatement activities included the installation of emergency exit signs, installing emergency eyewash/quick drenching units, installing LED lighting for PSTs, and recognizing and abatement of temporary electrical heaters in the Chemical Building. They received POs for fire extinguishers, AED, fire suppression systems, and first aid station services. Atkins' Corporate Safety collaborated and conducted site visits of Back River and Patapsco and plans to submit a review of findings in May.

ERCS coordinated a joint training session on April 28, 2023, at the Back River WWTP with plant staff and Patapsco WWTP staff to review changes to the newly released 20 SW Industrial Stormwater Permit, review application form completion, monitoring requirements and components of both plants' Stormwater Pollution Prevention Plans (SWPPP).

Training

The City's Program Management Team (PMT), Atkins Global, continues working with the city staff to help meet apprenticeship and ongoing training needs.

The B'More WISE cohort continues their training within their third rotation. The cohort has two intensive in-class learning days and three weekly on-the-job training courses. Their participation in the program has been received with positive feedback from both the cohorts and the host facility staff.

The plant has attained its goal of 120 training hours for 360Water-based training in the month of May.

The City is sending 15 operators from the Wastewater Facilities Division to the CWEA short course to aid in attaining class 5A operator certification.

Synagro Facility Update

Synagro is currently operating its three existing centrifuges, two temporary centrifuges, and a belt press while still repairing the on-site dryers. Synagro is also coordinating the hauling of the cake material for land application.

Summary

DPW has made substantial progress toward full compliance at Back River. **All monthly effluent permit parameters have been met for May 2023.** DPW recognizes that Back River is an asset to the Baltimore region, and we are excited and confident in the path forward and in sustaining our compliance.